



## **Desigo™ Insight** **Audit trail for critical environments, V5** **Engineering and user manual**

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# 1 About this document

## 1.1 Revision history

Version	Date	Changes	Section	Pages
V5	CM110796en_02 1.2.2011	Small text changes, Table formatted		
V4	CM110796en_01 27.3.2008	New V4		

## 1.2 Reference documents

Refer to the following documents for more information on the engineering and operation of Desigo Insight:

Ref.	Document title	Type of document	Document No.
	Installation and configuration	Engineering manual	CM110591en
	Engineering user function	Engineering manual	CM110592en
	Operating the management station, Volume 1	User's guide	CM110588en01
	Operating the management station, Volume 2	User's guide	CM110588en02

## 1.3 Before you start

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CitectSCADA™	Citect Pty. Ltd. see <a href="http://www.citect.com">citect.com</a>
Microsoft ...	Microsoft Corporation see <a href="http://www.microsoft.com/TRADEMARKS/t-mark/nopermit.htm">http://www.microsoft.com/TRADEMARKS/t-mark/nopermit.htm</a>
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### 1.3.2 Copyright

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These documents have been prepared with great care.

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- Any corrections necessary are included in subsequent versions.
- Documents are automatically amended as a consequence of modifications and corrections to the products described.

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### 1.3.4 Document use / request to the reader

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## 1.4 Document validity

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This document is valid for Desigo Insight Version 5.

## 1.5 Target readers

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This document contains all information needed to activate and engineer the database level audit trail functions of Desigo Insight. This engineering information pertains to the desktop and server versions of the Desigo V5 user applications. Note that some installation information and configuration functions are covered in the Installation and configuration manual, CM110591 and User Manual, CM110588.

## 1.6 Printing conventions

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### Symbols used

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**Caution** 

Example: Users with access level 2 or higher can change or delete data. The symbol to the left appears if data can be deleted or changed irretrievably.

**Hint**

Example: This symbol denotes information that helps you properly operate and use the programs. This information is based on experience; we strongly recommend to carefully study this information.

**Important comments**

Important information is grayed.

**Trademarks**

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### Typographic conventions

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**Introduction**

The following conventions apply to this document for names of buttons, keys, and fields.

**Display of keyboard keys**

Keyboard keys are always displayed between < and >.

Example: <Shift>, <Shift + N>

Table of the keys used in this document:

Press key	Description
Shift key	<Shift>
Enter key	<Enter>
Control key (Ctrl)	<Ctrl>
Delete key	<Del>
Insertion key	<Ins>
Space key	<Space>
Backspace key	<Backspace>
Alt key	<Alt>
Arrow keys	<Up>, <Down>, <Left>, <Right>
Alt key plus key "A"	<Alt + A>

## Elements in the application window

The elements in the application window are displayed as follows in this document:

Element	Description
Dialog boxes, tabs, and fields	Names of dialog boxes, tabs, and fields in Windows are displayed in <b>bold</b> . ...Example: The <b>Definitions</b> dialog box allows you to ...
Entries in fields	Prompts to type in values in specific fields are displayed in <i>italics</i> : ...Example: Type in the <i>database name</i> in the <b>Series</b> field. ...Example: Type in "13" in the <b>Series</b> field. Keyboard entries are placed between "..." .
Buttons	Buttons are displayed in <b>bold</b> . ...Example: When you click <b>Cancel</b> ... ...Example: Click <b>Save</b> . ...This tells you to click the <b>Save</b> button.
Menus and menu commands	Names of menus and the associated menu commands are displayed in <b>bold</b> . ...Example: Click <b>New Meter</b> in the <b>Dimensions</b> menu to ...

## Command sequences

The individual commands of a sequence that you must carry in a given order are separated by >.

...Example: **System** > **Meter** > right-click > **New Meter**

This tells you to right-click the **Meter** command in the **System** menu and then select **New Meter** in the menu that opens.

## Mouse click

In command sequences, right-click and double-click are mentioned specifically. For all other cases, left click the commands or buttons.

## Context menus

Right-clicking normally opens a context menu.

## Date and time format

How both time and date are displayed depends on your Windows operating system settings.



## 2 Database level Audit Trail

### 2.1 Introduction

In some critical environments (like pharmaceutical installations), there is demand for a high level of security on data stored in databases and to have a trace of all database manipulations (e.g. unauthorized deletion of a log event).

Desigo Insight prevents all unauthorized attempts at modifying records in databases and saves a copy of these events in the Audit Trail database.

Associated with this audit trail, the Database Audit Viewer allows you to view its contents or to open and view archives from this database.

To help understand the advantage of the audit trail, let's see the following example:

The first screenshot shows the 'Object Viewer' window for 'ditech://Atlantis:B'15'. It displays a tree view on the left with items 14, 15, and 16. Item 15, 'Analog value', is selected, and its details are shown on the right: Name 'PrVal', Value '190.0', and Description 'Present value'.

The second screenshot shows the 'Log Viewer' window. It has a menu bar and a toolbar. Below is a tabbed interface with 'All', 'Alarm', 'System', 'User', and 'Status' tabs. The 'User' tab is active, showing a table with columns: Event Group, Date/Time, Priority, Event, Message, Value, User, and Technical Desc. The table contains one entry: User, 16/04/2008 16:59:34, Medium, Value modification, 180.0, Administrator, Atlantis:Building.

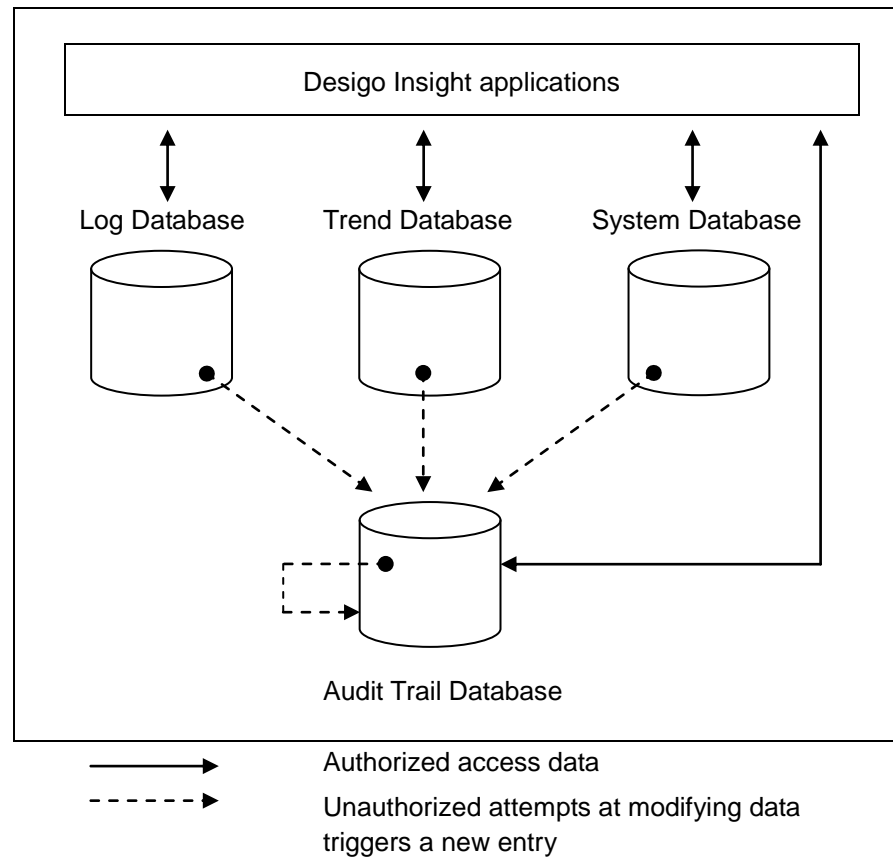
The third screenshot shows the 'Database Audit Viewer' window. It has a menu bar and a toolbar. Below is a table with columns: AuditLo..., AuditDBName, SysObjID, PrimaryKey, AuditActionID, ColName, and OldValue. The table contains one entry: 2096, [DIV23IPRJ=DI\_V4\_BL9Aur\_AuditDB=ISHTLOG], dbo.LogEntry, 300C7EC6-B475-46EF-8866-BDEDCC947F94, 0, ArgValueReal, 190. At the bottom, there is a filter bar showing 'ColName:= ArgValueReal' and a status bar indicating '1 entry out of 73 filtered'.

We can see in Object Viewer the real point value is 190. But that is strange, the only event we have in Log Viewer is “Value modification” with value 180. In normal case it's difficult to explain this difference.

With Audit Trail database associated with Audit Viewer we can investigate deeper and see someone has manipulated the Log database with SQL Server Management Studio tool and changed the value.

ModifiedDate	AuditDBName	ColName	OldValue	NewValue	HostName	AppName
16/04/2008 17:00:41	[DIV23IPRJ=DI_V4_BL9Aur_AuditDB=ISHTLOG]	ArgValueReal	190	180	CHT1W40209	Microsoft SQL Server Management Studio

An audit trail enabled Designo Insight project has following architecture:



## Features and Benefits

- Database level Audit Trail prevents unauthorized attempts at modifying data within the audit trail, log, trend and system databases.
- Database Audit Viewer application is used for searching and reporting on data within the audit trail or secure archive data files from legacy Pharma Solutions.
- Hourly backups of all database transaction logs and daily full database backups can significantly reduce the potential data-loss in case of disaster.
- The integrity of archived data is secured using a highly complex checksum for each archive file. The “readability” of the archive files throughout the data retention period can optionally be guaranteed by using XML as the storage format.

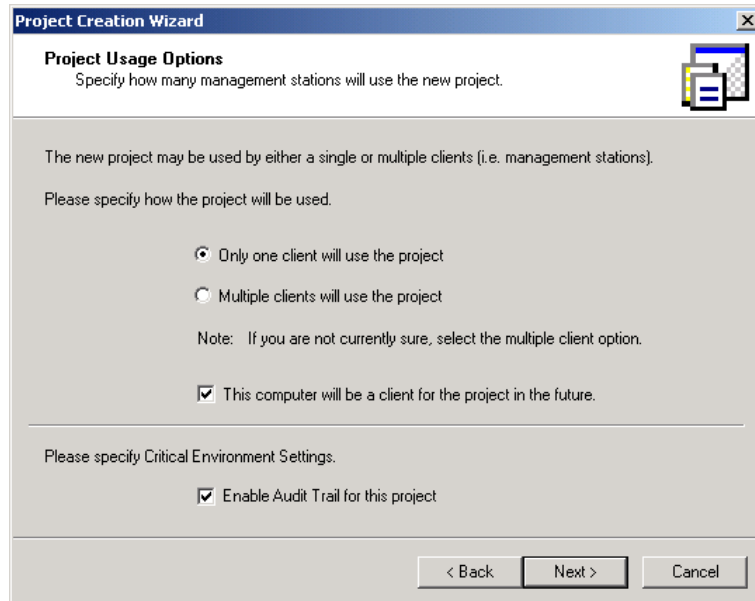
## 3 Audit Trail installation

### About this section

This section deals with the Project Utility critical environment settings in particular, and describes the associated configuration procedures.

### 3.1 Enabling the audit trial

Enabling the audit trail for a Desigo Insight project must be done in project utility during the project creation.



When you create a new project, the second wizard dialog box shows the option “Enable Audit Trail for this project”. Click on the check box if you want to have it.

For the others step of Project creation is like usual and refer to the “Installation and configuration, Engineering manual” CM110591en.

### Caution

Once your project is created with the audit trail option enabled or not, it is not possible to change this option. If you have forgotten to enable Audit Trail option and it is required in your project, the only possibility is to create a new project.

## 3.2 Enabling mandatory comments

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In a critical environment all user actions must be logged. This log information must also include the reason why the user made the change. In Desigo Insight a feature has been added that allows the BMS administrator to force users to enter a comment for any write action taken. This feature must be enabled on any audited project or projects running in a critical environment. The function is independent of the license and can be activated only in Desigo PX projects if desired by the customer.

Refer to CM110591en, Installation and configuration.

## 3.3 Enabling enhanced backup

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When a Desigo Insight project is deployed in a critical environment, it is often installed on an SQL Server instance. In this case it is recommended that the Desigo Insight feature “Enhanced Backup” is enabled. This feature uses built-in SQL Server functionality to make hourly backups of the main databases. These backups can then be used – together with the Desigo Insight project backup to regenerate a crashed server.

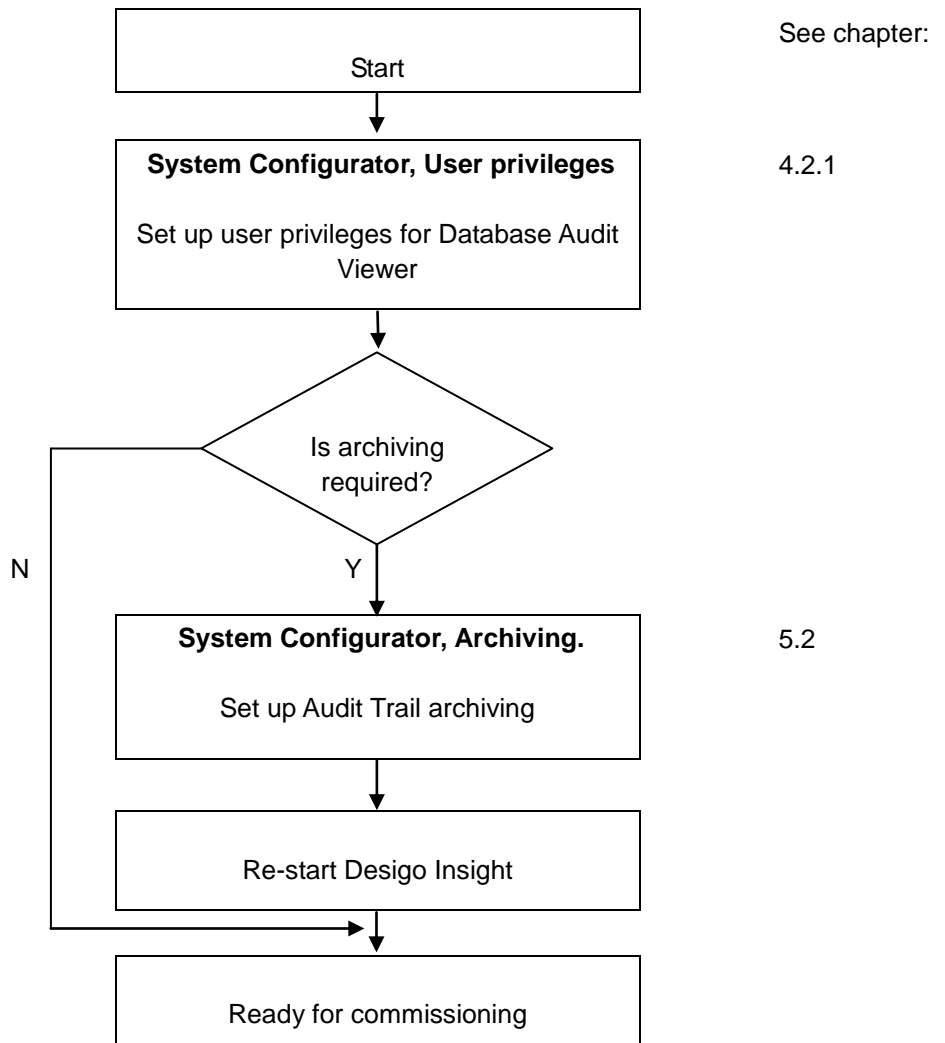
Refer to CM110591en, Installation and configuration..

## 4 Audit Trail settings

### About this section

This section deals with the configuration options for audit enabled projects and the Database Audit Viewer in particular. It describes the associated configuration procedures.

### 4.1 Engineering overview



## 4.2 Configuring the Database Audit Viewer

### Configuration options

- Enabling user group access to Database Audit Viewer
- Enabling automatic Database Audit Viewer start at user log-in
- Configuring the user group privileges for Database Audit Viewer functions
- Configuring the archiving of the Audit Trail database

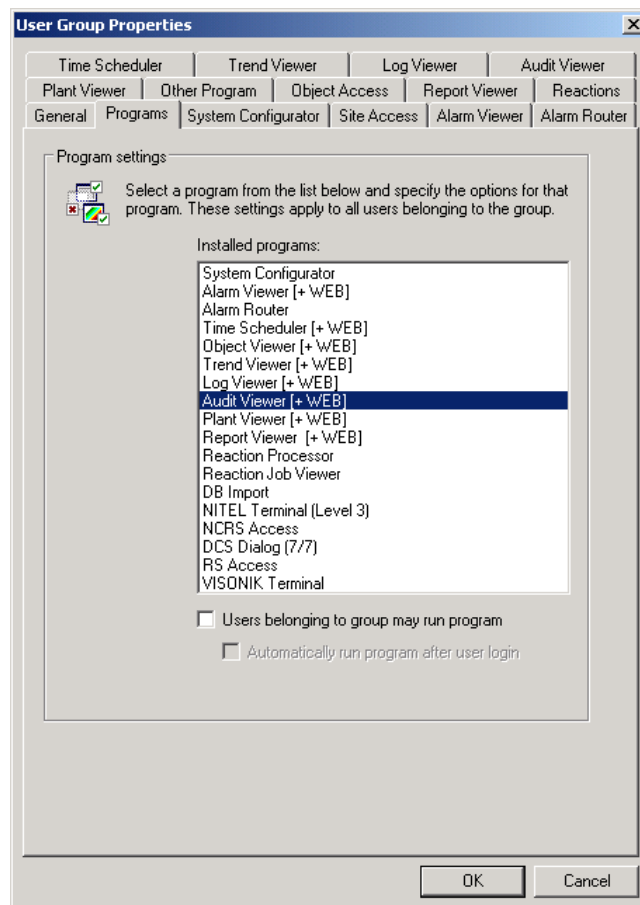
### Reference

For details of user options to customize the Database Audit Viewer workspace (column order, visibility etc.), refer to chapter 6.

### 4.2.1 User group settings for Database Audit Viewer

#### How to configure user access to Database Audit Viewer

1. Start System Configurator from the Desigo Insight taskbar.
2. Open the desired user group properties by right-clicking on the user group folder and then selecting **Properties**.
3. In the **Group properties** window go to the **Programs** tab:



4. Select Audit Viewer from the list of installed programs.
5. Select the check box: "User belonging to this group may run application".
6. Click **OK**.
7. Repeat steps 2 and 3 for all user groups.

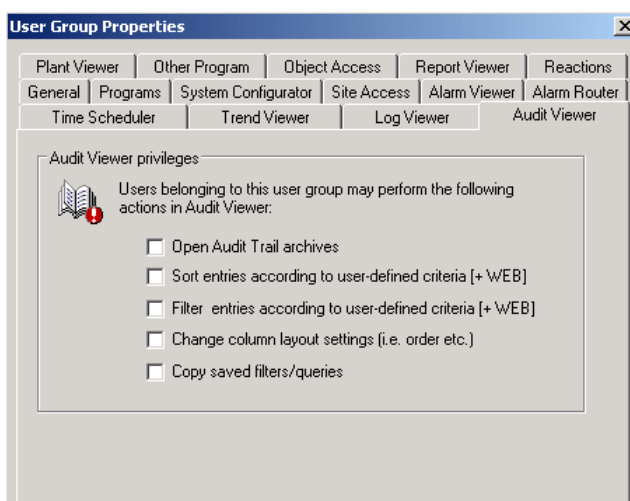
## How to configure automatic Database Audit Viewer start at user log-in

1. Start System Configurator from the taskbar.
2. Under **User Groups** double-click the desired user group folder.
3. In the **Group properties** dialog box go to the **Programs** tab:  
Select **Audit Viewer** from the list of installed programs and select the check box "Automatically run program after user log-in".  
(Note: To have this option available, first select the check box "User belonging to this group may run application").
4. Click **OK**.
5. Repeat steps 2 and 3 for all user groups.

## How to configure Database Audit Viewer user group privileges

Perform the following steps for every user group having access to Database Audit Viewer:

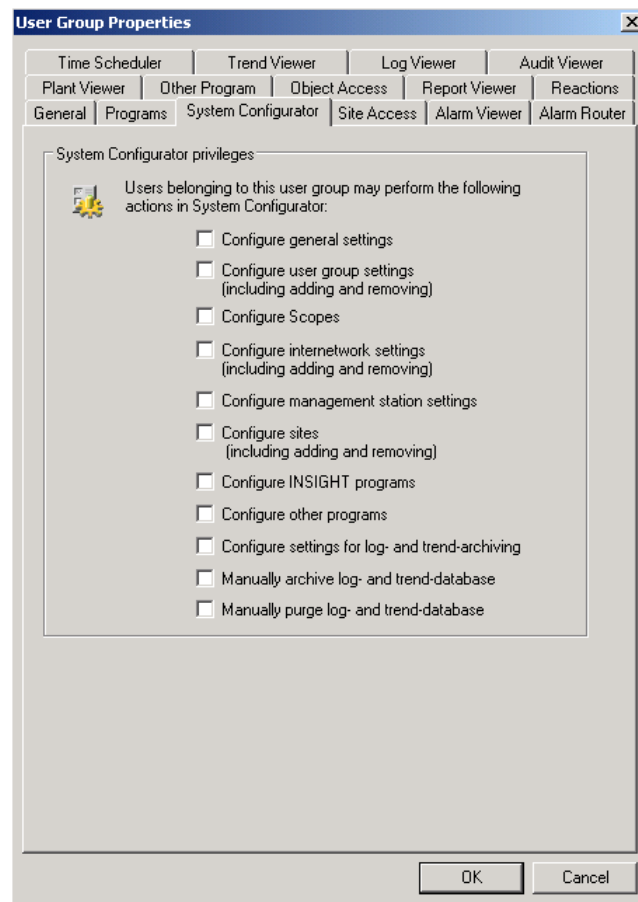
1. Start System Configurator from the Designo Insight taskbar.
2. Open the desired user group properties by right-clicking on the user group folder and clicking **Properties**.
3. In the **User Group Properties** window open the **Audit Viewer** tab and configure the user group privileges as desired:



User group privileges	Database Audit Viewer command affected
Open Audit Trail archives	Open <b>Archive</b> command in the <b>File</b> menu
Sort entries according to user-defined criteria	Sorting by clicking in the column headings Buttons to release sort order in the toolbar
Filter entries according to user-defined criteria	<b>Predefined...</b> and <b>Save ...</b> commands in the <b>Filter</b> menu; Buttons and combo box to save and recall filter queries in the toolbar
Change column layout settings (i.e. order etc.)	<b>Customize...</b> command in the <b>Tools</b> menu
Copy saved filters/queries	<b>Copy</b> button in the <b>All queries</b> window

4. Click **OK**.

There are some settings associated with archiving to which a user group can be granted privileges. These privilege settings are common for Log, Trend and Audit Trail archiving. They grant the user group access to the functions under User Group properties and tab System Configurator.



User group privileges	Audit Viewer command affected
Configure settings for log, trend and audit trail archiving	Archive Database command in the Tools menu
Manually archive log, trend and audit database	This either archives the entire database, or manually triggers an archive according to current settings, depending on the selection
Manually purge log and trend	This option has no influence, because when Audit Trail is enabled, the Manual purge function is not allowed for any kind of database.



## 5 Archiving

“Archiving” means that data that is available in a database (e.g. Audit Trail Database) are transferred in a first step to that database’s archive database. Then, according to the archive schedule, the data is moved into archive files (either binary proprietary or XML format). “Purging” data permanently deletes the records from the database.

### About this section

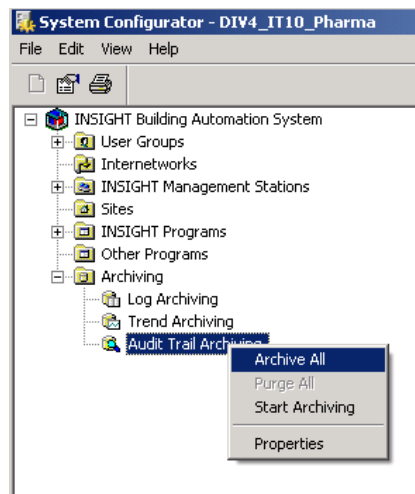
This section deals with the archive function and the configuration options for the audit trail database.

### Reference

To know more about the archive mechanism, refer to the document CM110592en, Engineering user function, chapter “Archiving”.

## 5.1 Manual archiving and purging

To access these functions, start System Configurator and expand the Archiving tree. There are two setup options, for Audit Trail data (also log and trend data). The setup procedure for Audit Trail data is to all intents and purposes identical.



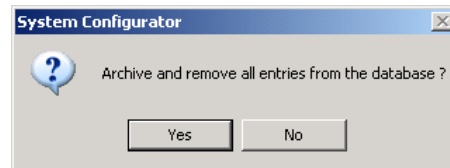
Right-clicking on one of the archiving options displays three main archiving choices, and the **Properties** option:

- Archive All
- Purge All (gray)
- Start Archiving
- Properties

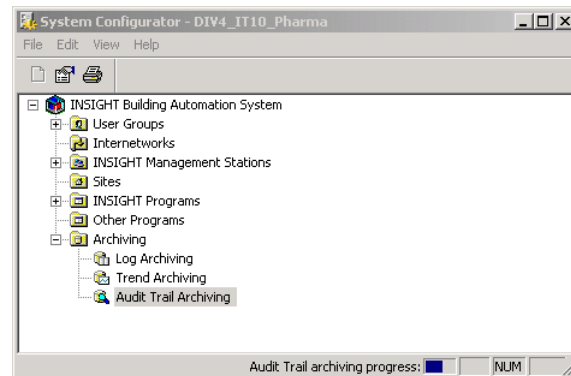
## Archive All

This function allows audit trail data to be manually archived without having to carry out any setup for automatic archiving. All of the audit trail database entries are transferred to the archive database.

Selecting the **Archive All** option results in the following prompt for confirmation:

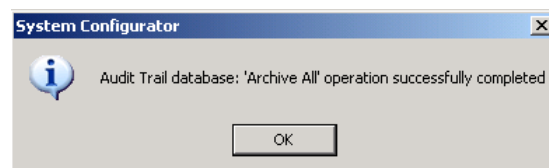


Choosing **Yes** causes the contents of the Audit database to be transferred to the archive database. While this process is running, a progress indicator is displayed in the status bar:



Progress Indicator bar

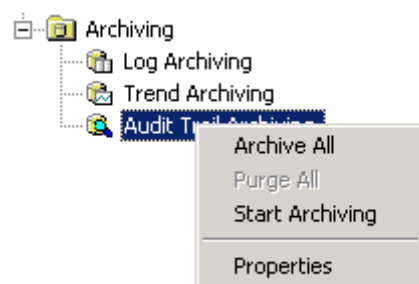
When complete, the following message is displayed:



The audit database is now empty, all entries having been transferred to the archive.

## Purge All

When the Audit Trail is enabled, the Purge All function is not allowed and is grayed out in menu and that for all databases, Log, Trend and Audit.



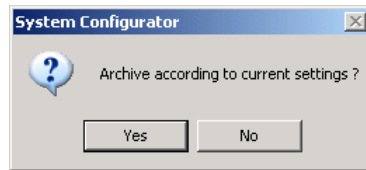
## Start Archiving

This option is a means of triggering an archiving process which normally takes place automatically based on time or the number of entries. For this option to work, it is necessary to have first set up the automatic archiving settings. The automatic archiving process is then triggered. All settings apart from the trigger criterion are valid.

## Reference

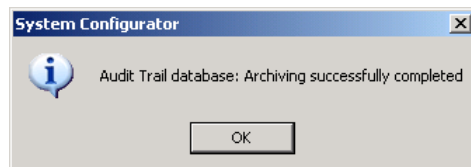
For details of how to set up automatic archiving, refer to the next section 5.2 in this manual.

To trigger archiving manually, start System Configurator, right-click on the **Audit Trail Archiving** folder, and select **Start Archiving**. You will be presented with the following prompt for confirmation:



Answering **Yes** will cause the archiving process to start. While this process is running, a progress indicator is displayed in the status bar.

When the process is complete, a message will be displayed:

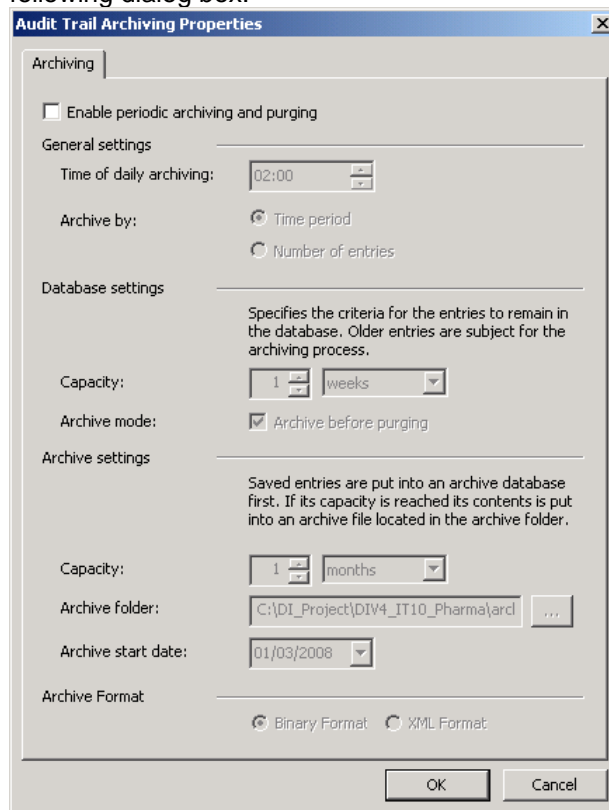


Depending upon the current settings for automatic archiving, there may be some entries left in the audit database after completion of the archiving process.

## 5.2 Automatic archiving and purging

The settings described on the next pages apply equally for Audit Trail, Log or Trend data archiving.

To set up automatic archiving, start **System Configurator**, right click on the **Audit Trail Archiving** option, and select **Properties**. You will be presented with the following dialog box:



To set up automatic archiving, select the **Enable periodic archiving and purging** check box. The grayed out fields then become editable.

There are two mechanisms available for automatic archiving: by “Time period” or by “Number of entries”.

- “Time period” is useful when regular timed backups have to be made, e.g. when monitoring a manufacturing process. Individual archives can then be created for specified time periods.
- Otherwise, “Number of entries” can be used. Then, the engineer can control the archiving process on the basis of the amount of data, and hence, the archive file size.

## General archive settings

General settings apply to both archiving methods. There are three parameters to set:

- “Time of daily archiving”: The archive process is run once daily. The settings determine whether there is actually any archiving to do or not. If possible, a time should be chosen when the management station is not being operated by a user (e.g. at night). This is because the archiving process consumes system resources, and a user might notice some degradation of performance.
- “Archive by”: This is where you select whether archiving should happen by time period or by number of entries.
- “Archive format”: The archive process can generate to two types of file. The binary format is proprietary and can be opened only by a Desigo Insight application, (e.g. Database Audit Viewer or Trend Viewer). The XML archive file format can be opened by either the respective Desigo Insight application or other XML editor tools.

## 5.2.1 Archiving by time period

If “Archiving by time period” is selected, the following settings can be adjusted:

**Audit Trail Archiving Properties**

Archiving

☒ Enable periodic archiving and purging

General settings

Time of daily archiving: 02:00

Archive by: ☒ Time period ☐ Number of entries

Database settings

Specifies the criteria for the entries to remain in the database. Older entries are subject for the archiving process.

Capacity: 1 weeks

Archive mode: ☒ Archive before purging

Archive settings

Saved entries are put into an archive database first. If its capacity is reached its contents is put into an archive file located in the archive folder.

Capacity: 1 days

Archive folder: C:\DI\_Project\DIV4\_IT10\_Pharma\arcl ...

Archive start date: 01/03/2008

Archive Format: ☒ Binary Format ☐ XML Format

OK Cancel

### Database settings

#### “Capacity”

This setting determines how much data is allowed to accumulate in the database before it is transferred to the archive database.

#### “Archive mode”

This check box determines if the data is archived when the criteria are met, or whether the data is purged. The default setting is “Archive before purging”. If unchecked, the data will be purged and permanently deleted. When the “Archive before purging” option is checked, data will be moved into archive files according to the “Archive settings” settings defined below.

### Archive settings

#### “Capacity”

This is the capacity of the archive database, and this setting also determines the way in which the serialized archive files are created. For example, if the archive database capacity is 1 week, then when it is full, the serialized data file is created with the same capacity.

#### “Archive folder”

This path determines the location of the serialized archive files. Note that the active archive database itself is an SQL database and so is located elsewhere according to the SQL data path and is not directly accessible.

The default path can be left unchanged. The archive Audit database path is set by default to:

*[Desigo Insight Project Root directory]\archaud\*

To change the path, click the **Browse** button. You are then presented with the standard Windows selection dialog box. Browse to the required location of your archive database folder. When the correct opened folder appears in the “Look in:” list box, click the **Open** button. This closes the dialog boxes and saves your selection.

Check that your selected path has been accepted.

Note

The user must have “Write” privileges if the archive database and the SQL server are not on the same PC. The standard path must also be written according to UNC convention (e.g. [\\chstadata01\project01\...](#)).

**“Archive start date”**

This setting determines on which date the archiving process should start. As the settings for time-based archiving are intervals, and not actual times or dates, this setting is important to synchronize the creation of archive files to the desired time spans.

**“Archive format”**

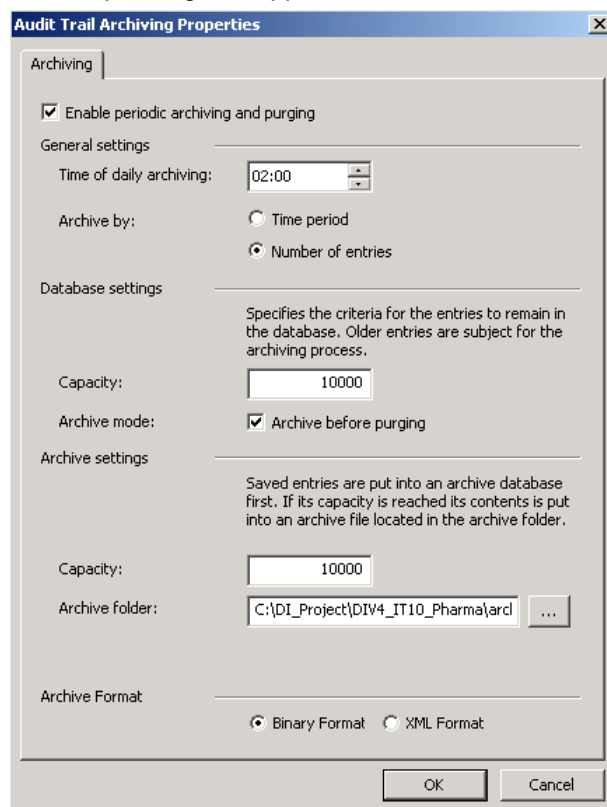
The archive process can generate archive files in one of two different types. The binary format is proprietary and can only be opened with the Database Audit Viewer. The XML format can be opened by Database Audit Viewer and also other XML editor tools.

Note

Part of the archived data is accessible in Database Audit Viewer (the data in the “active archive database”). If binary format is selected for archives, once transferred to serialized files, the audit data is only indirectly accessible via Audit Viewer. These archive files have to be “opened” in order for the data to be viewed in readable form. Refer to the user guide for details of how to do this.

## 5.2.2 Archiving by number of entries

This archiving mechanism allows the engineer to set up an archiving system based on the volume of data. When the “Archive by” flag is set to “Number of entries” then the setup dialog box appears thus:



General settings are the same as described under “Archiving by time period” above.

Under “database settings”, the capacity is given in terms of number of entries; this is defined between 0 and 100 000 entries.

Under “Archive settings”, the capacity of the archive database can be defined between 1 000 and 1 000 000 entries.

### Multiple management station projects

For multiple management station projects, the archived audit trail database is accessible by any Desigo Insight management station, even if the Desigo Insight project database is not shared. This is because the archive files are stored separately from the common SQL database.

## 6 Database Audit Viewer

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### About this section

The Audit Trail is like an informer that tracks any attempts to modify records within Desigo Insight project databases (Trend, Log, System or Audit itself). If there are no unauthorized attempts to hack the databases, the Audit Trail will remain empty. If this is not the case the Database Audit Viewer allows viewing the contents of the Audit Trail to reconstruct the modification done to the project database.

### 6.1 Introduction to Database Audit Viewer

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#### Functions

The Database Audit Viewer is used to display all entries available in the Audit Trail for Desigo Insight. To enable users to work on the Audit Trail and to select subsets of the data stored within it, the Database Audit Viewer incorporates a range of sophisticated filter and sort options.

Audit Viewer includes the following functions:

- View the current audit trail database contents
- Display data from the active archive database or archive files
- Display data from legacy Pharma Solution (XML archives)
- Basic print options can be applied to the displayed data list
- Personalized workspace saves user interface changes for each user, e.g. window location and size, column order, filter or sort settings, etc..

### 6.2 Start and exit Database Audit Viewer

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#### Manually start Database Audit Viewer

To start Database Audit Viewer manually from Desigo Insight:

1. Click **Database Audit Viewer**  on the Desigo Insight taskbar.  
This opens the Database Audit Viewer. The content window appears.

#### Exit from Database Audit Viewer

1. Select **File > Exit**.

#### Note

Settings such as the current Sort and Filter criteria as well as the current window size and position, are saved when exiting on a user-specific basis and re-applied automatically when the Database Audit Viewer is next started by that user.



## 6.3 Operate the Database Audit Viewer

### Reference

For general information about operating Designo Insight applications: refer to the document CM110588, "Operating the management station" in section "General Operation".

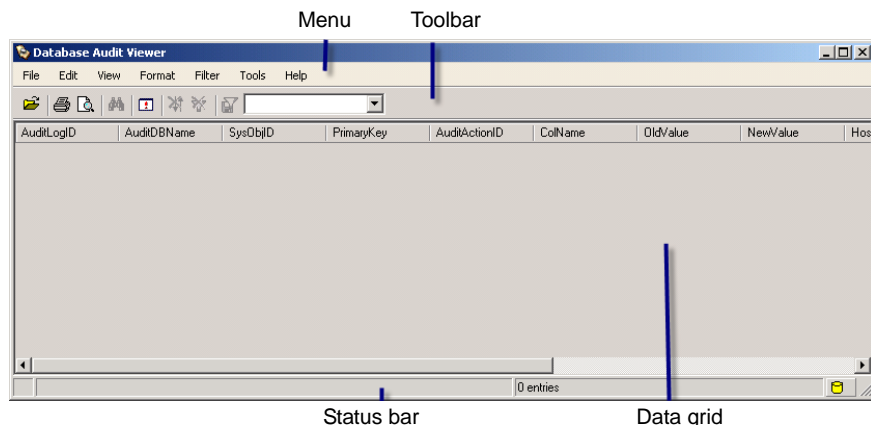
### Database Audit Viewer application description

Descriptions of menu commands, toolbar and content windows are located in the Designo Insight online help.

A short description of the toolbar displays when the pointer is pointing at a menu command.

### Operation elements

Displays all with the most important associated information:



The data grid column names can vary depending on the type of data displayed (e.g. Audit Trail, Archived audit data or Legacy XML archive.). Filtering and sorting settings apply to the type of data viewed.

### Refreshing the data grid

Database Audit Viewer displays a snapshot of the data from the source selected, e.g. Audit Trail database or archive file. This means that new entries, e.g. in the audit trail database, are not displayed automatically. The data grid can be refreshed by any of the following events:

- The user presses <F5>
- The user clicks the [refresh button icon] refresh button in the toolbar
- The user selects **Refresh** from the View menu
- The user sorts or filters the current view
- Database Audit Viewer is restarted

### Context menu

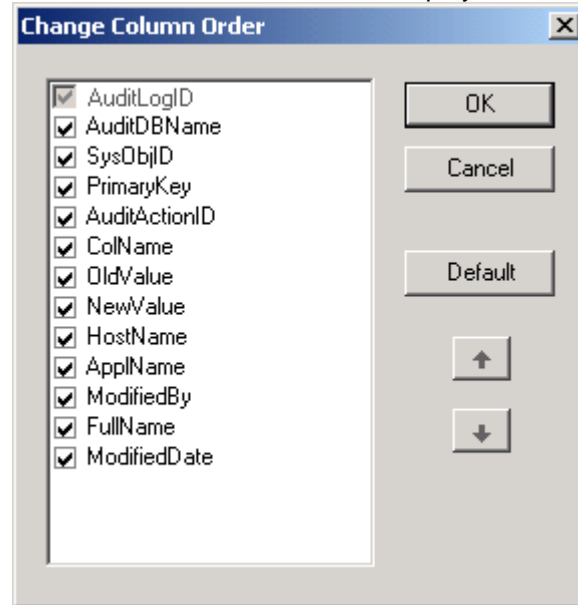
Right-clicking a field in the data grid opens a context menu with the following content:

Context menu	Description
Filter by "xxxxxx"	Filter column based on selected entry.
Remove Filters	Remove all filters in the current data grid
Remove Sorting	Remove sorting in the current data grid

## Define columns

The user can customize workspace by modifying column width and order.

1. From the **Tools** menu, select **customize workspace**.
2. Select or clear the tick-boxes to display or hide columns:



3. To change the column order, select one of the displayed columns and use the arrow buttons to move it up or down in the list.
4. Click **Ok** to apply the new settings.

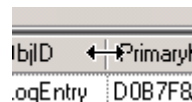
## Note

The **AuditLogID** is the reference column and cannot be moved or hidden. It appears on top and grayed in the list above.

## Change column width

The sizing of column width works in the same way as in Windows Explorer:

1. Point mouse to column divider.  
The cursor changes from a pointer to a double-headed arrow.
2. Holding down the left mouse button, drag the frame in either direction indicated by the arrow.
3. Release the mouse button to end the “resize” operation.



You can also double-click column divider to auto resize the column width.

## Reset / auto resize rows and columns

To optimize all rows height:

1. From Format menu, chose Auto resize rows  
OR <Ctrl+Alt+R>  
OR click on the [icon] **Auto resize rows** button on the toolbar

To optimize all columns width:

1. From Format menu, chose Auto resize columns  
OR <Ctrl+Alt+C>  
OR click on the [icon] **Auto resize columns** button on the toolbar

## Hint

To optimize the view, we suggest to **Auto resize columns** first and then **Auto resize rows**.

To reset (restore original sizes) rows:


1. From Format menu, chose Default rows size  
OR <Ctrl+Alt+Z>

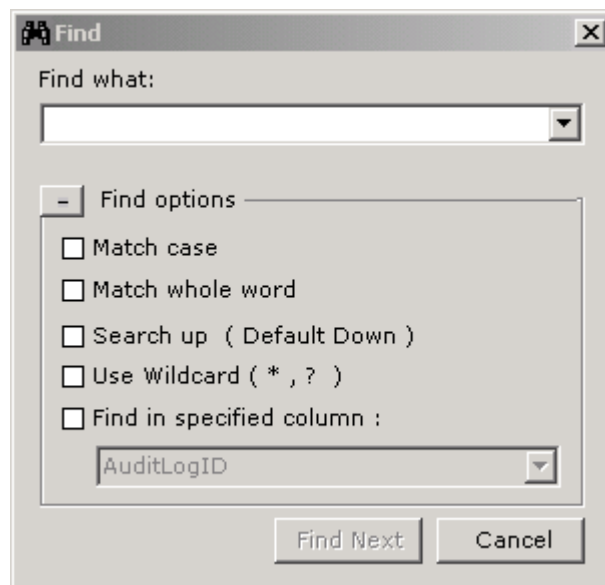
### 6.3.1 Find...

If you are searching a specific text, the Database Audit Viewer provides a “Text search” oriented **Find** function. This is slightly different to the function that exists in other Designo Insight applications (Log Viewer, Alarm Viewer) which are object oriented. The reason for this difference is the format of Audit Trail database, which contains changes done in multiple databases and resulting data are mostly textual.

#### Find text

Several possibilities to invoke the Find dialog box:

1. Click in “Find”  on the toolbar.  
OR  
From the **Edit** menu, select **Find**.  
OR  
Press <F3>.



2. Write the text to be found in the “Find what” field.
3. Choose the find option:

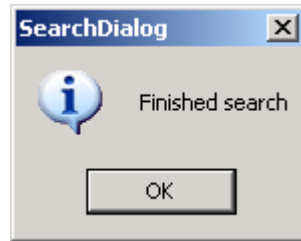
Check box	Description
Match case	Find function is case sensitive.
Match whole word	All words written in the “Find what” field must be available.
Search up (default down)	Start searching up from the selected row.
Use wildcard (*, ?)	Use characters “*” and “?” as wildcards and not as normal characters.
Find in specified column	Limits the find function to a specific column.

Wildcards	Description
*	Represents any character or group of characters.
?	Represents a single character.

4. Press Find Next.
5. The row and column containing the text is selected.
6. Press Find Next if you want search the next similar text.

Find function search only text available in columns enable in **customize workspace...** dialog. See the above to enable, disable columns.

- Once the search is finished (no other text is found) the following popup appears:



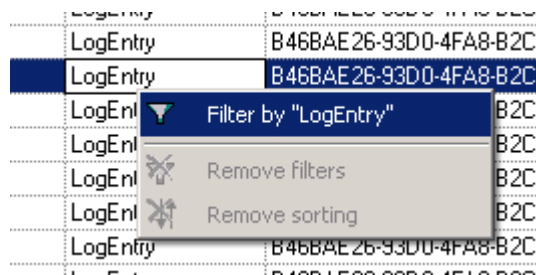
### 6.3.2 Filtering

#### Filter view

Filtering the view produces a subset of the complete database. If required, the view can be filtered by more than one criterion simultaneously. Also currently applied filters can be saved and can be recalled at any time.

#### Filter by "..."

- Place the cursor on the field to be used as a filter criterion.
- Right-click to display the context menu.
- Select the **Filter by "..."** command to filter the view by this item.



- If an additional criterion must be done, you can repeat the procedure.

Between each filter criterion the operator applied is AND.

#### Indication of filter status

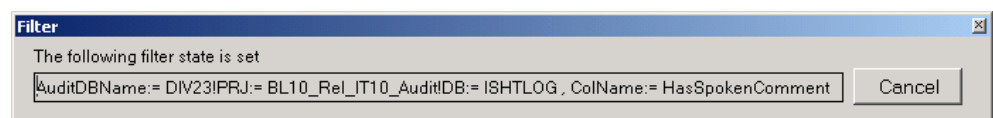
A funnel icon on the column header indicates that the data grid view is filtered.

AuditLogID	AuditDBName	SysObjID	PrimaryKey	AuditActionID	ColName	OldVal
30	[DIV23\PRJ:=BL10_Rel_IT10_Audit\DB:=ISHTLOG]	dbo.LogEntry	19982498-E171-478F-BE5B-68B927C5F8D0	2	HasSpokenComment	0

The current applicable filter criteria are also detailed on status bar:

AuditDBName:= DIV23\PRJ:= BL10\_Rel\_IT10\_Audit\DB:= ISHTLOG , ColName:= HasSpokenComment

A double click on the Filtering icon on the status bar opens a field containing full details of the filter criteria:



## Remove filters

Remove all filters from a view.


1. Click "Remove Filters"  on the toolbar.  
OR  
Right click anywhere on the filtered data grid. In the context menu, select **Remove Filters**.  
OR  
Select menu **View > Remove Filters**.

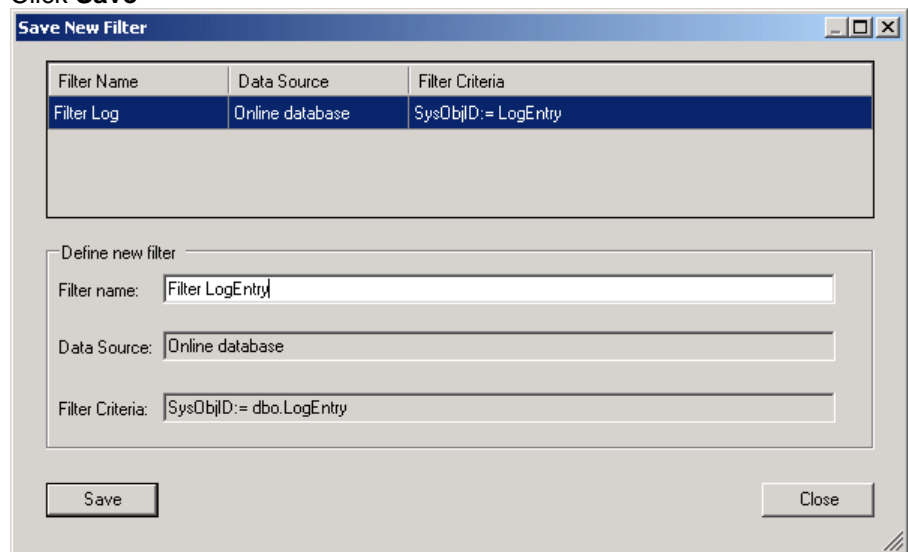
Remove on specific filter criterion.

1. Right click the relevant column. Select **Remove "=..."**

## Save filter "..."

Filters can be saved for use later providing the user's group has the required permissions (see 4.2.1 for User Group privileges). Saved filters can be applied to any data grid view providing the data source is the same, e.g. online database or archive file.

1. Filter the view as required.
2. Select **Filter > Save**.  
OR  
Click "Filter"  on the toolbar to display the save filter dialog.
3. Enter the filter name.
4. Click **Save**



The dialog box titled "Save New Filter" contains a table with the following data:

Filter Name	Data Source	Filter Criteria
Filter Log	Online database	SysObjID:= LogEntry

Below the table, there is a section titled "Define new filter" with three input fields:

Filter name:

Data Source:

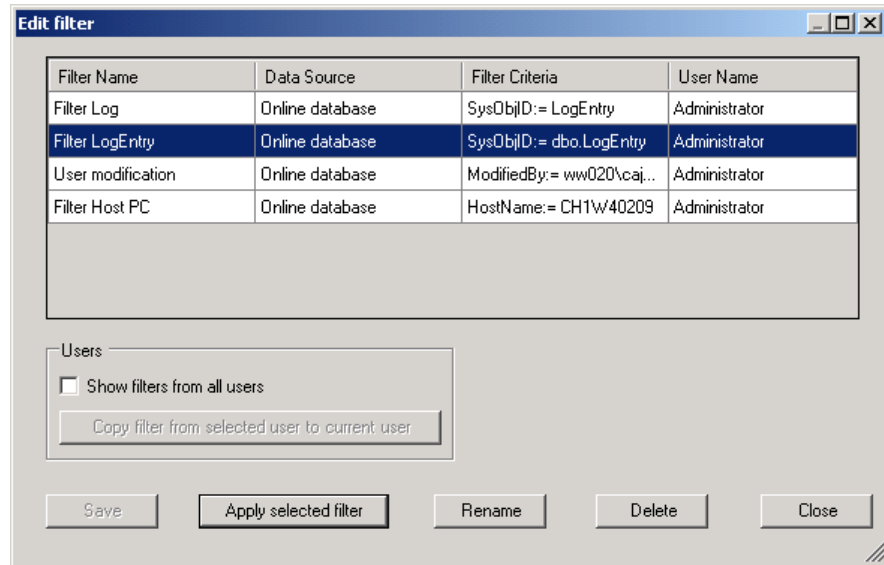
Filter Criteria:

At the bottom, there are two buttons: "Save" and "Close".

## Recall filter from menu.

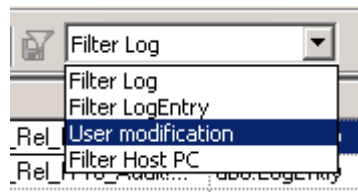
Saved filters are user specific, in that a user can only view filters that he or she has previously saved. Save filters can be copied from one user to the current user providing that the current user's group has the required permissions (see 4.2.1 for User Group privileges).

1. Select **Filter > Predefined...**
2. In **Edit filter** dialog, select the desired filter.
3. Click **Apply selected filter**.
4. Click **Close**.



### Recall filter from the list on toolbar.

1. Display the drop-down list from the toolbar and select the filter to be applied:



### Note

Whenever a filter is applied to a view, any other active filters are removed.

### Rename filter

1. Select **Filter > Predefined...** to display the list of existing filters.
2. Select the filter to be renamed and double click on it in column **Filter name** or press the button **Rename**.
3. You are now in edit mode.
4. Write the new filter name.
5. Press enter to accept the new name.
6. Click **Save** to save your changes.
7. Click **Close**.

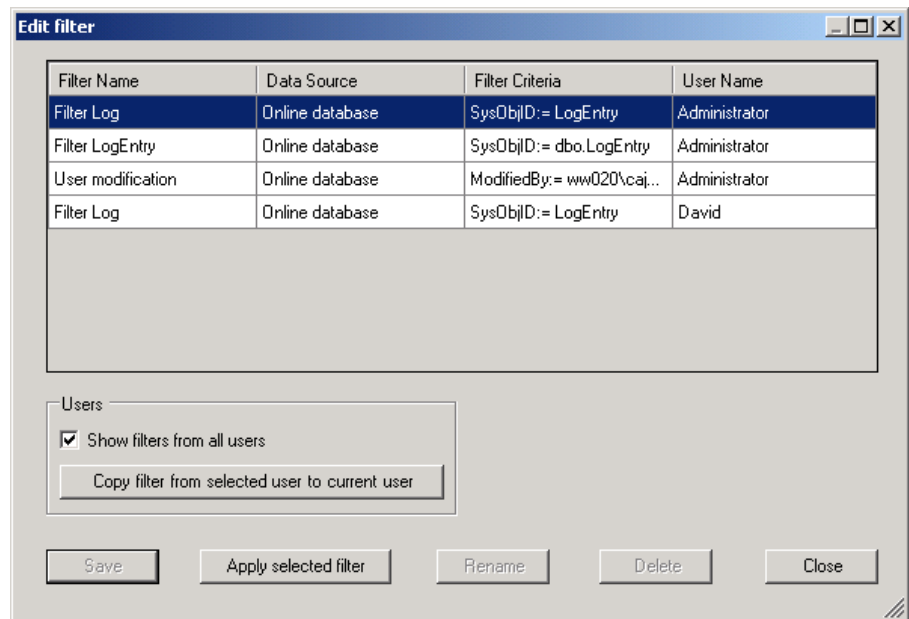
### Delete filter

1. Select **Filter > Predefined...** to display the list of existing filters.
2. Select the filter to be deleted.
3. Press the button **Delete**.
4. A confirmation dialog will display, press **Yes** to confirm.
5. Click **Save** to save your changes.
6. Click **Close**.

## View filters from other users

By default when you open the Edit filter dialog (**Filter > Predefined...**), you see only your saved filters. An option allows you to see filters created by all users in the project and to copy them into your user profile.

1. Select **Filter > Predefined...** to display the Edit filter dialog.
2. Enable the check box **Show filters from all users**.



## Copy a filter from another user to current user

1. Select **Filter > Predefined...** to display the Edit filter dialog.
2. Enable the check box **Show filters from all users** if it is not.
3. Select the filter to be copied.
4. Press the button **Copy filter from selected user to current user**.
5. Click **Save** to save your changes.
6. Click **Close**.

### 6.3.3 Sorting

As general rule, each column can be sorted independently in ascending or descending order. By default, if no specific sorting criteria is applied, each column is sorted in descending order, with the **AuditLogID** column having the highest priority. This default state is never indicated.

Sorting is initiated by clicking the heading of the column to be sorted.

The first column to which sorting is applied has the highest priority in the sort hierarchy. The last column to be sorted has the lowest priority in the sort hierarchy.

#### Sort entries

1. Click the heading of the relevant column.  
Clicking the column heading for the first time sorts the appropriate column in ascending order.
2. Click a second time to change the sort criterion to descending order.
3. Click a third time to remove the sort criterion for this column.

#### Indication of sort status

When one or more columns are sorted, arrowhead symbols are display in the appropriate column headings to indicated which of the column are sorted, and in which order (ascending or descending).

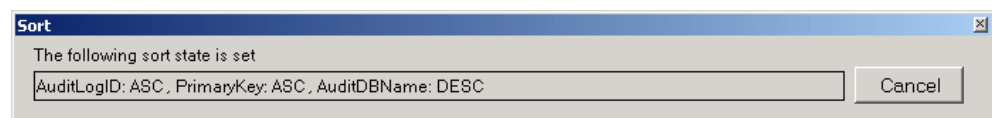
Further, a number beside each symbol indicates the sort priority for this column.

AuditLogID / 1	AuditDBName	3 SysObjID	PrimaryKey	2 AuditActionID	ColName
1	LogDB	LogEntry	B46BAE26-93D0-4FA8-B2C3-9DDCB7EBB050	1	EventNumber
2	LogDB	LogEntry	B46BAE26-93D0-4FA8-B2C3-9DDCB7EBB050	1	EventNumber

If at least one of the columns in the view is sorted, the following icon appears on the status bar:




A double click on the sort icon on the status bar opens a field containing full details of the sort criteria:



#### Remove sorting

1. Click the relevant column heading until sorting is removed.
  - a) First click, column is sorting in ascending order.
  - b) Second click, column is sorting in descending order.
  - c) Third click, sorting is removed.

#### Remove sorting from all columns

1. Click "Remove sort" .  
OR  
Select **View > Remove Sorting**.  
OR  
Right click to open context menu and select **Remove sorting**.



## 6.4 Print from the Database Audit Viewer

From the Database Audit Viewer it is possible to print all or a selection of rows and then selected columns to display in the printed document.

### Configure print settings



You can configure the print setting properties for printing the Audit Trail database.

- Paper size, orientation and margins.
- Printer selection and printer properties configuration.

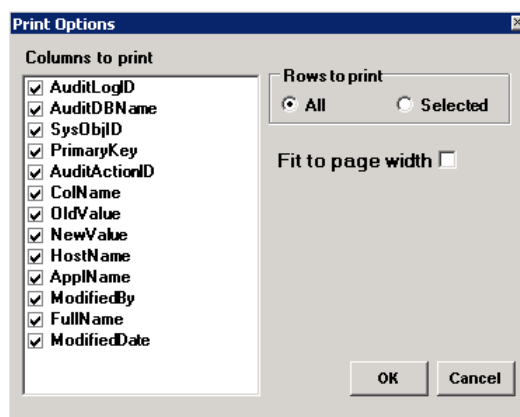
1. Click **File > Page setup...**
2. Configure the page settings.
3. Click **OK**.

### Print...

To print all or a selection of rows:

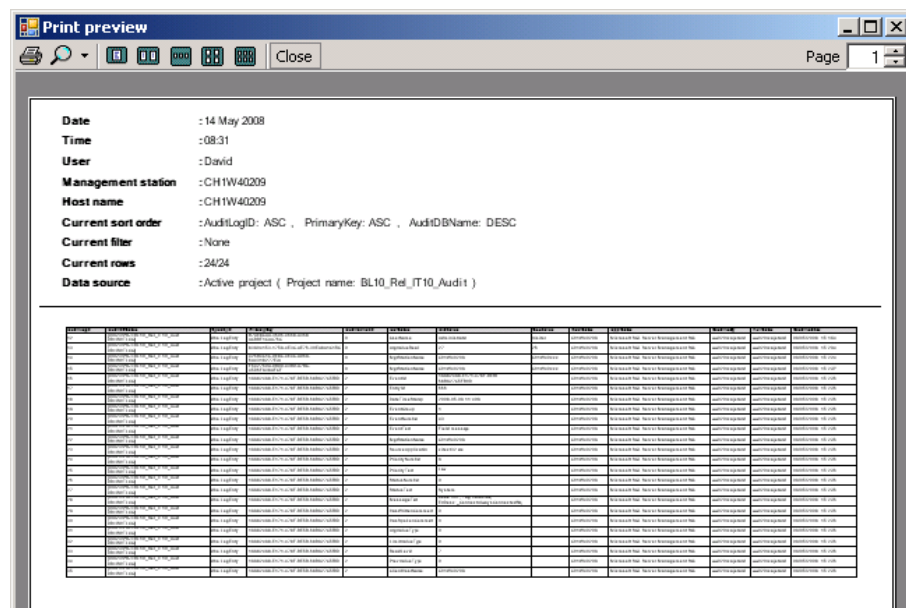
1. Click **Print**  or **Print preview**  in toolbar.  
OR

**File > Print Preview...** or **Print...** in menu and the following dialog box is displayed:












2. Enable columns you are interested to printing with the check box.
3. Chose if the document will contain all or the previously selected rows.
4. Then chose the option "Fit to page width" if you want arrange all columns in one page.
5. Click **Ok**.

If **Print preview...** was chosen at the beginning, this one is displayed. Otherwise the print dialog box is displayed and you can choose the printer you want to use.



To execute the printing, press the following button: 

In the **Print Preview** dialog you have the following options:

Icon	Description
	Sends the preview document to the printer.
 <div> <div>✓ Auto</div> <div>500%</div> <div>200%</div> <div>150%</div> <div>100%</div> <div>75%</div> <div>50%</div> <div>25%</div> <div>10%</div> </div>	Zoom, choose if you want increase or reduce the size of the view. The Auto selection adapts the size of the view with the size of the preview dialog.
	Displays on page at a time.
	Displays two pages at a time.
	Displays three pages at a time.
	Displays four pages at a time.
	Displays six pages at a time.
	Closes the Print Preview dialog and returns to Database Audit Viewer.
	Shows and selects the page is currently display.


## 6.5 View archived audit data

### Archive overview

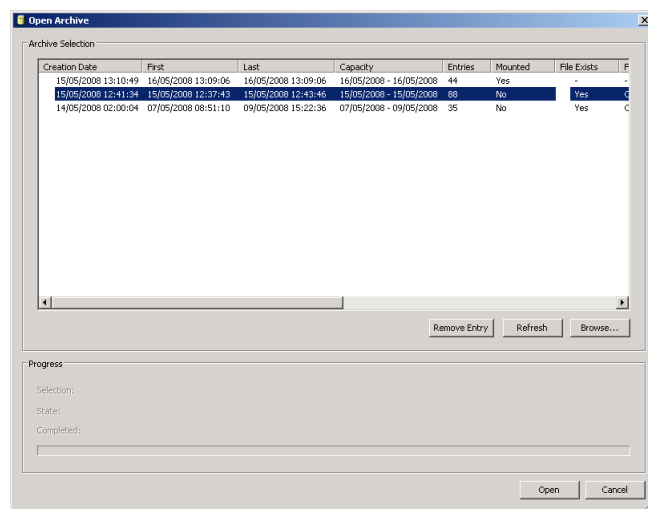
The archiving of audit data in your Desigo Insight system normally has been set up by the commissioning engineer. The archiving may be configured to take place on the basis of elapsed time, or number of database entries.

Once the archives have been created, the database can be opened and the data series can then be viewed in Database Audit Viewer.



### Open Archive

1. Click **Open** button  in toolbar.  
OR  
Select menu **File > Open Archive**.  
OR  
<Ctrl+O>

A dialog box is displayed showing the available archives:



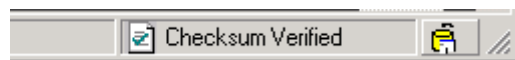
2. The archive files are identified by the time and date stamp of the first and the last entries.  
The small icons have the following meaning:

Icon	Description
	This “filling tank” icon means the archive file is not full. More data may be added when the next archive operation is performed.
	This “full tank” icon means the archive file is full (according to the archive criteria selected).



3. The size of the archive files is dependent on the archiving settings defined by the system engineer.
4. Click **Open** to open the selected archive.
5. After the archive is opened the archived data can be viewed in the Database Audit Viewer.

## Indication Archive opens

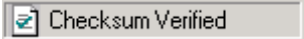

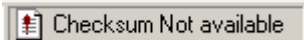
When an archive is open, some additional information is display in status bar:



Database icons:

Icon	Description
	Contents of the Database Audit Viewer display come from Audit Trail database.
	Contents of the Database Audit Viewer display come from an archive file.

Checksum icons:

Icon	Description
	The integrity of the archive file can be trusted. The checksum has been recalculated and matches with the originally created checksum.
	The integrity of the archive can not be trusted. The archive file or its original checksum has been manipulated. The checksum recalculation does not match with the originally created checksum.
	The integrity of the archive can not be verified. The original checksum could not be found. The checksum recalculation was not able to verify the archive against its original checksum.

## Close Archive.

1. Select menu **File > Close Archive**.  
OR  
<Ctrl+X>

When an archive is closed the display will return to view the contents of the audit trail database.

## Why do I have to open an archive?

When a database is archived, it is converted into a compressed format which cannot be viewed directly. When an archive is opened, its contents are temporarily mounted in the database server, just like another database.

## What happens if I open all my archives?

Only those databases that are in use will remain opened. Those which are not used for a certain timeout period will be unlinked from the database server. The original archive file still exists.

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